5   **WHAT IS CLAIMED IS:**

1. A method for analyzing one or a plurality of digital images using a plurality of
     software agents, comprising:

         -    A program for initializing and assigning a plurality of agents to at least
              one of said images;
10   -   Means for said agents to perceive at least one of said images at one or a
              plurality of scale representations; and
         -    Means for said agents to modify pixel values of said images.

2. The method as claimed in claim 1, wherein each said agents further comprise:
15   -   Sensors to locally sense information comprised in said images;
         -    Decision making means for allowing said agents to take action in
              accordance to specific mental states;
         -    Processing means for processing said information perceived by said
              sensors.
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3. The method as claimed in claim 1, wherein said step of assigning further
     comprises the steps of:

         -    Preprocessing at least one of said images;
         -    Producing spatial coordinates from results of said step of preprocessing;
25   -   Assigning said agents according to said spatial coordinates.

4. The method as claimed in claim 2, wherein said agents have the capability to
     further adapt said sensors by changing configuration of said sensors.

5. The method as claimed in claim 4, wherein said step of changing configuration
30   of said sensors comprises at least changing size of said sensors.

6. The method as claimed in anyone of claims 4 and 5, wherein said step of
     changing configuration of said sensors comprises changing resolution of said
     sensors.

7. The method as claimed in claim 1, wherein said means to perceive comprises:

35   -   Analyzing said images at a first scale representation by means of at least
              one of said agents;
         -    Analyzing said images at a second scale representation by means of at
              least one other of said agents; and
         -    Exchanging information between said agents at said first and second
40   scale representations.

8. The method as claimed in claim 7, wherein said step of exchanging information further allows for at least one of said agents to adapt itself.

9. The method as claimed in claim 1, wherein said scale is a spatial scale.

10. The method as claimed in claim 1, wherein said scale is a semantic scale.

11. The method as claimed in any one of claims 2, 4, 5,6, wherein said sensors provide a spatial multiscale representation of said image, wherein said multiscale representation simultaneously provides said agents with image information at every considered spatial scale.

12. The method as claimed in claim 11, wherein said multiscale information provides a multiscale signature and wherein said signature further allows said agent to classify said information.

13. The method as claimed in claim 12, wherein said step of classifying information is achieved by means artificial neural networks.

14. A method for contour recognition in one or a plurality of digital images by means of one or a plurality of software agents, comprising the steps of:

    - Initializing and assigning at least one of said agents to an image, said agents comprising at least one sensor;
    - Said agents recognizing said contours in said image by means of said sensors; and
    - Said agents drawing said recognized contours in said image.

15. An apparatus for analyzing one or a plurality of digital images, comprising:

    - Image data input means;
    - At least one processing node, said processing node comprising memory and processing unit;
    - A method for analyzing said images, said method as claimed in claim 1; and
    - Display means for displaying said images.